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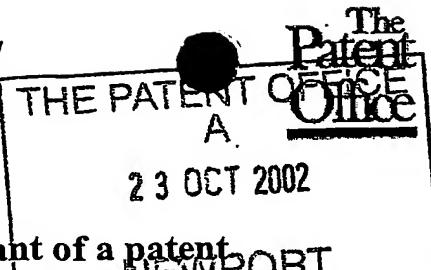
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The Patent Office

Cardiff Road, Newport  
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2. Patent application number <i>(The Patent Office will fill in this part)</i>	0224644.5	23 OCT 2002	
3. Full name, address and postcode of the or of each applicant ( <i>underline all surnames</i> )	DAVID HACKETT 11 Regents Park, Duchy Road, Salford. M6 7DS		
Patents ADP number ( <i>if you know it</i> )	7861453002		
If the applicant is a corporate body, give the country/state of its incorporation			
4. Title of the invention	A CASTOR		
5. Name of your agent ( <i>if you have one</i> )	URQUHART-DYKES & LORD Greg's Buildings, 1 Booth Street, Manchester. M2 4DU		
"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)	Harrison Goddard Fox Orlando House 11c Compstall Road Maple Bridge Stockport SK6 5HT.		
Patents ADP number ( <i>if you know it</i> )	1644f014 000 14571002.		
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7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application		Date of filing ( <i>day/month/year</i> )
8. Is a statement of inventorship and or right to grant of a patent required in support of this request? ( <i>Answer "Yes" if:</i> ) <i>a) any applicant named in part 3 is not an inventor, or b) there is an inventor who is not named as an applicant, or c) any named applicant is a corporate body; see note (d)</i>	NO		

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Statement of inventorship and right to grant of a patent (patents form 7/77)  
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Request for substantive examination (patents form 10/77)  
Any other documents (please specify)

11

I/We request the grant of a patent on the basis of this application.  
Signature Date 22/10/02

Urquhart-Dykes & Lord.  
URQUHART-DYKES & LORD

12 Name and daytime telephone number of person to contact in the United Kingdom

0161 832 9353 - M J AJELLO

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**A CASTOR**

THIS INVENTION relates to castors.

Many mobile devices such as shopping and hospital trolleys are manoeuvrable on four such castors, usually one at each corner, and such devices are notorious for their inability in certain circumstances to permit the trolley to be manoeuvred in a straight line, particularly when heavily loaded and when it is required to direct the trolley around corners. This difficulty arises largely through the inability of the castors to rotate freely about their upright axes.

It is an object of the present invention to provide a castor with increased freedom of rotation about the upright axis on which it is mounted on the frame or chassis of the trolley.

Typically, such castors are mounted on a thrust bearing which may be subject to contamination or wear such that the relatively moveable parts of the bearing assembly tend to become stiff or misaligned.

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According to the present invention there is provided a castor comprising a fork having a pair of dependent lobes between which extends a transverse axle bearing a wheel, the fork being freely rotatable on a first upright axis with respect to a first upright member connected to the fork, the first upright member being freely rotatable on a second upright axis with respect to a second upright member connected to the first upright member, the second upright member being adapted for connection to a frame or chassis member of a load bearing object such as a trolley.

Preferably, the first and second upright axes are aligned.

The castor may comprise three or more roller or ball bearings.

One of the bearings may be a thrust bearing.

The second upright member may be welded to the frame or chassis member.

The fork, first upright member and second upright member may be held in aligned assembly by a single central bolt or rivet.

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The first upright member may include a roller bearing axially aligned with said first upright member.

The second upright member may comprise a pair of axially aligned roller bearings each aligned with the second upright member.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawing which is a vertical elevation, partly in cross-section, illustrating the castor and its connection to a frame member of a trolley.

In this embodiment there is provided a castor wheel 10 mounted on a transverse axle 11 extending between a pair of lobes 12 of a fork generally indicated at 13.

A cross plate 14 at the top of the fork is connected via a thrust bearing 15 to a first upright member 16 by means of a bolt 17 the shaft of which extends upwardly through the entire bearing assembly to be secured by a nut 18 and washer 19.

Surrounding the shaft of the bolt 17 within the first upright member 16 is the inner part of a first concentric roller bearing 20. Thus,

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the fork 13 is freely rotatable about the vertical axis of the bolt 17 with respect to the first upright member 16, and the latter is also freely rotatable about the axis of the bolt 17.

Also mounted on the shaft of the bolt 17 above the first upright member 16 is a second upright member 21. This member is mounted on a pair of axially aligned roller bearings 22 and 23 such that the cylindrical wall of the second upright member 21 is rotatable on the bearings 22 and 23 with respect to the bolt 17, to the first upright member 16 and to the fork 13.

Welded or otherwise attached to the cylindrical wall of the second upright member 21 is a frame member 24 of a trolley or other load bearing object.

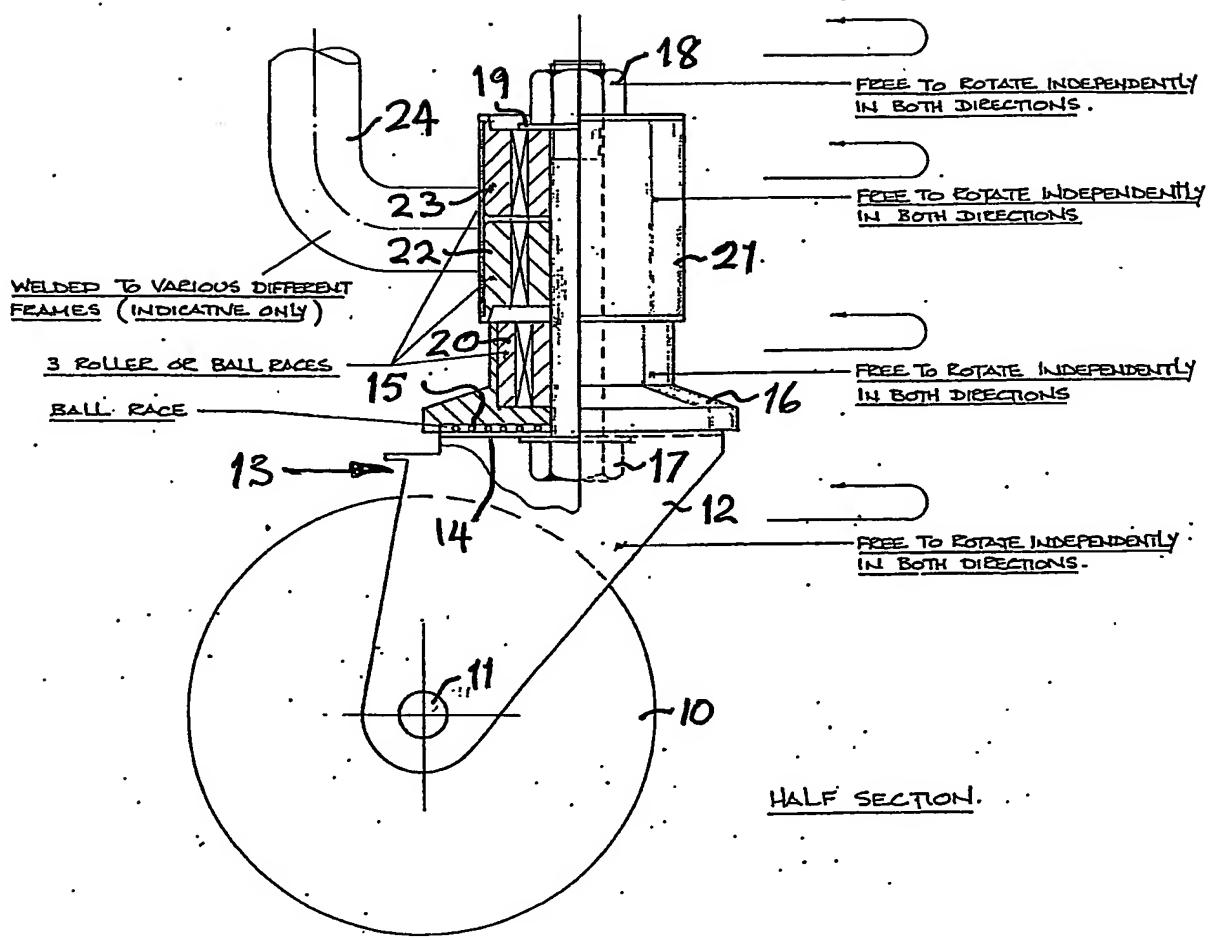
It will therefore be seen that the fork 13, the first upright member 16 and the second upright member 21 are all freely rotatable relative to one another thus providing entirely free rotation of the castor with respect to the frame member 24.

If preferred, the roller bearings 20, 22 and 23 may be replaced by ball bearings.

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If required, the upright axes of rotation of the first upright member 16 and the second upright member 21 may be displaced by the interposition of a horizontal plate attached to one or other of the upright members and rotatable with respect to the other such upright member upon a thrust bearing or the like. Preferably however all axes of rotation are aligned thus ensuring complete freedom of rotary movement of the respective parts of the assembly.

Although not illustrated, a shroud may be provided at the interface of each pair of relatively rotational members thus to minimise the risk of contamination of the bearings by dust and the like.



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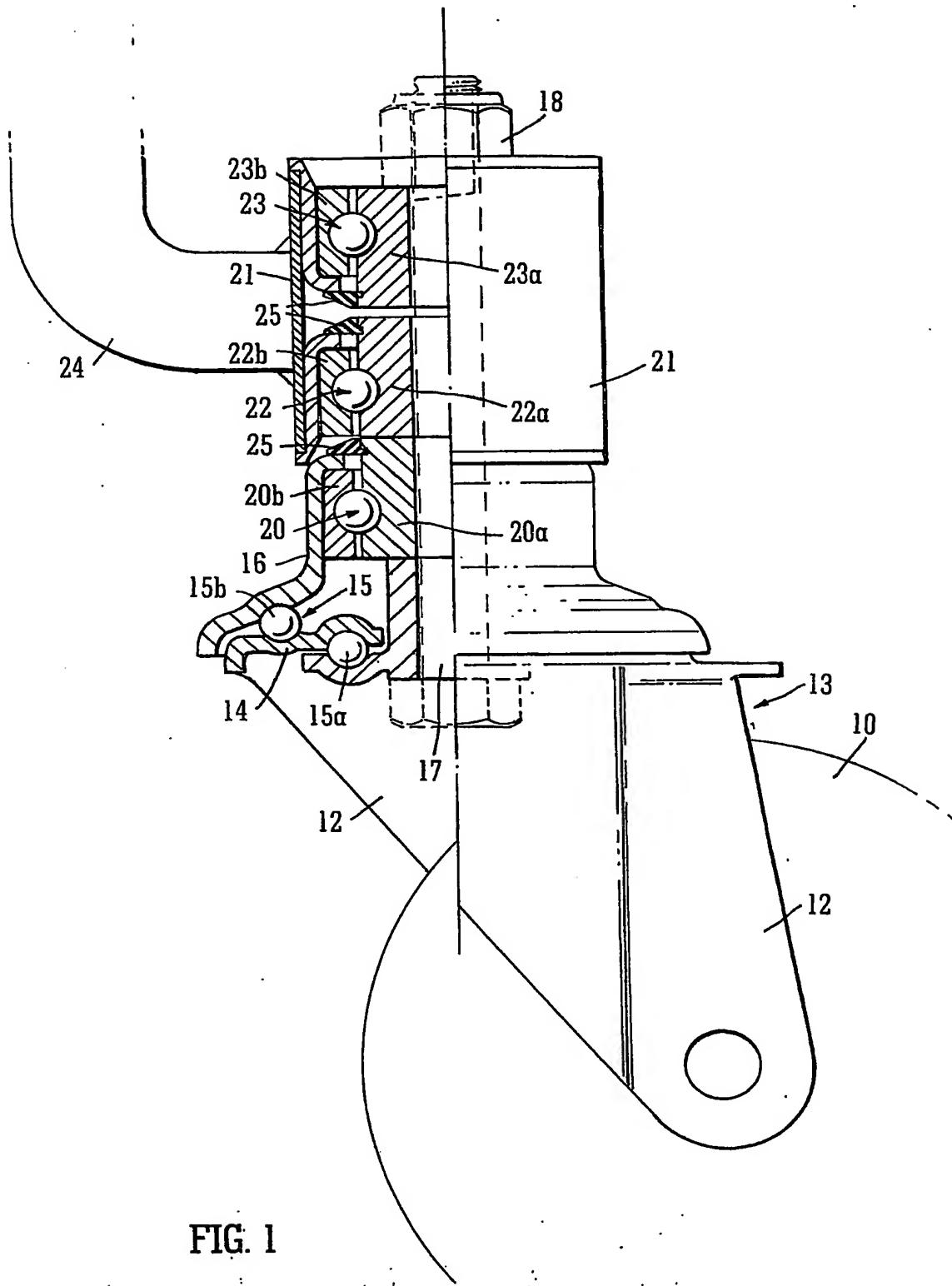


FIG. 1

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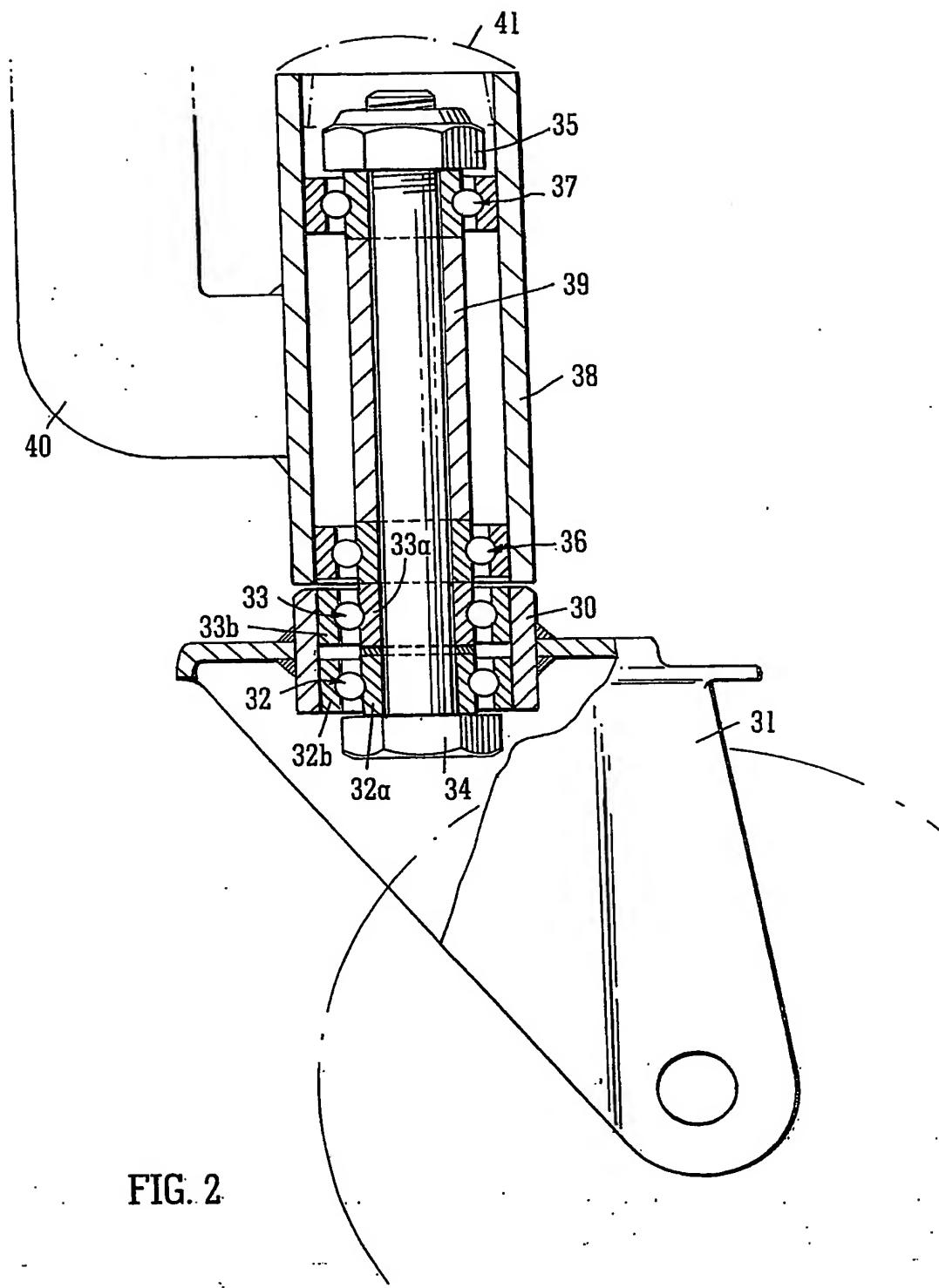


FIG. 2

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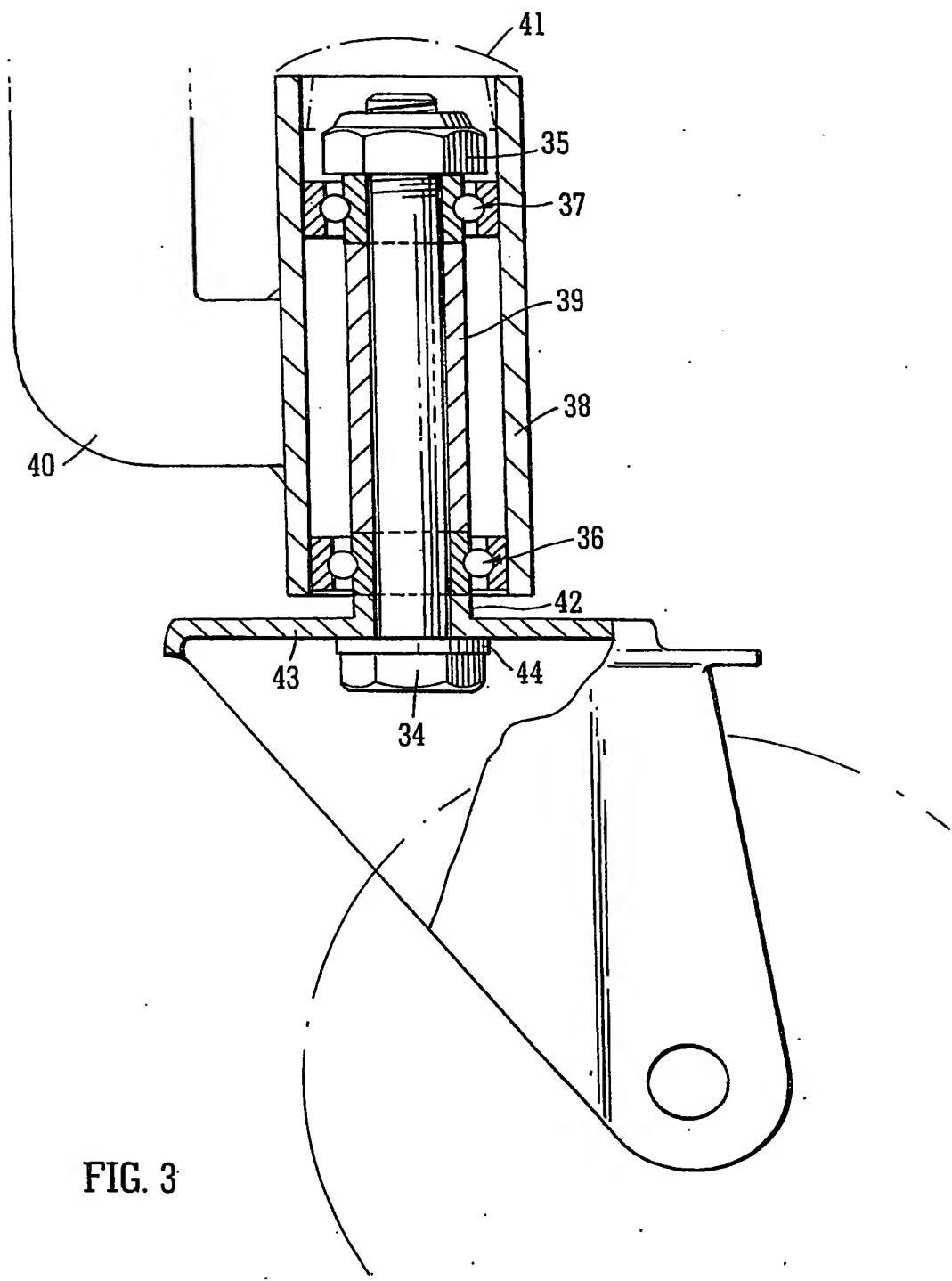
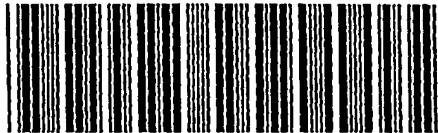


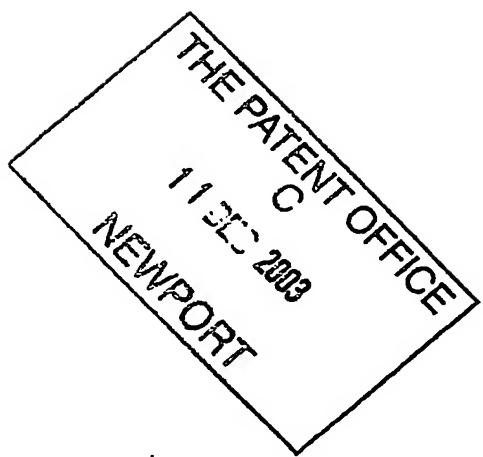
FIG. 3

PCT Application

**GB0304569**



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